Contents	Volume 111, December 1988
Kang-Man Liu (Hsinchu, China) Decomposition of Matrices into Three Involu	utions 1
JOEL E. COHEN (New York, New York) Spectral Inequalities for Matrix Exponentials	s
JEAN-PIERRE DEDIEU (Cedex, France) Matrix Homographic Iterations and Bounds Certain Band Matrices	
DÉNES PETZ (Budapest, Hungary) AND JAI (Warszawa, Poland) Characterizations of the Trace	
PEI YUAN Wu (Hsinchu, China) Products of Positive Semidefinite Matrices .	53
HANS SCHNEIDER (Madison, Wisconsin) AND (Hattiesburg, Mississippi) Allowable Spectral Perturbations for ZME-M	O THE LAND HAVE MANY
D. Vere-Jones (Wellington, New Zealand) A Generalization of Permanents and Determ	inants119
H. Schreck and G. Tinhofer (München, Gern A Note on Certain Subpolytopes of the Ass Associated with Circulant Graphs	ignment Polytope
Walter D. Morris, Jr. (Fairfax, Virginia) Counterexamples to Q-Matrix Conjectures.	
PHILIPPE J. DESCHAMPS (Fribourg, Switzerland) A Note on Isomorphic Characterizations of Matrix in Error-Component Models	of the Dispersion
Oscar Adolfo Sánchez Valenzuela (Mexico Matrix Computations in Linear Superalgebra	• •
GEORGE D. POOLE (Johnson City, Tennessee) AND MICHAEL LAIDACKER (Beaumont, Texas) Projectionally Exposed Cones in \mathbb{R}^3	183
ALLAN J. MACLEOD (Paisley, Scotland) Finite-Dimensional Regularization with Nonio	
AKIHIRO NISHI (Saga, Japan) A Generalization of the Binet-Minc Formula for Permanents	

Contents continued

MELVYN W. JETER (Bloomington, Illinois) AND WALLACE C. PYE (Hattiesburg, Mississippi) Structure Properties of W Matrices	219
CLAUDE BREZINSKI (Cedex, France) Other Manifestations of the Schur Complement	231
THOMAS H. PATE (Auburn, Alabama) Lower Bounds for Permanents of Gram Matrices Having a Rank One Principal Submatrix	249
PAUL A. BEKKER (The Netherlands) The Positive Semidefiniteness of Partitioned Matrices	261
P. STAHLECKER (Mainz, West Germany) AND G. TRENKLER (Dortmund, West Germany) Full and Partial Minimax Estimation in Regression Analysis with Additional Linear Constraints	279
N. Eagambaram (New Delhi, India) Generalized Inverses with Nonnegative Principal Minors	293
ACHIYA DAX (Jerusalem, Israel) Linear Programming via Least Squares	313
Reports	
RICHARD A. BRUALDI (Madison, Wisconsin) Review of Proceedings of the Second International Tampere Conference in Statistics	325
Author Index	327